

PROJECTED ECONOMIC IMPACTS OF A
FARM MACHINERY MANUFACTURING FIRM ON PERRY TOWNSHIP, OHIO*

How much could Perry Township or Lake County afford to invest in industrial site improvements to attract a farm machinery manufacturing firm? Would the area benefit or lose if a tax abatement is given to the firm? The attached results show the impacts on Perry Township, Lake County, and the Perry Local School District of a typical firm which manufactures farm machinery.

It is estimated that 59 persons would be employed. Most of the community data came from reports issued by the state auditor and has not been verified with local officials. Data on the firm are derived from the 1972 Census of Manufactures.

Based upon results of previous research, it was assumed that 40 percent of the new plant employees would be residents of Perry Township, 30 percent would commute from the rest of Lake County, 10 percent would move into the county, and 20 percent would commute from outside the county.

Changes in Local Incomes

Employees in Perry Township are estimated to earn \$172,257 more than they would otherwise in the first year if the plant was established. Employees in the rest of Lake County should earn \$119,965 more in the first year. Depending on where they live, these employees are estimated to spend from 20 to 60 percent of their new income in Newton Falls. When combined with multiplier effects, this would increase the incomes of area merchants and their employees by \$27,161 in the first year.

Public Finance Impacts of New Jobs

The tax base in the county would expand enough to provide both Perry Township and Lake County with greater increases in revenues than in expenditures (see Table 1). The township should have a net increase in revenues of \$4,348 in the first year. By year 10, this should increase to \$5,329 (after removing inflation), since nearly 70 percent of the township's property tax is from inside millage.

Lake County government should have a net gain of \$8,208 in the first year, but is estimated to increase to \$9,779 in year 10. This occurs primarily because of the county sales tax.

The Perry Local School District has a projected net increase of \$6,684 in year one. While local property tax revenues increase by \$34,464, state aid to education is \$23,912 less than without this new firm. This change is a result of the equal yield formula for state aid that guarantees the same total expenditure per pupil for a given tax effort regardless of local wealth.

*Prepared by George Morse, Resource Economist, and John David Gerard, Technical Assistant, Economic Research, Department of Agricultural Economics and Rural Sociology, Ohio Agricultural Research and Development Center and the Ohio State University, November 1979, ESO 671.

Local Investments in Site Improvements

The bottom two lines of Table 1 show the breakeven investment for attracting this firm. It's labeled "Present Value Over 10 Years at 5.0" and it shows the value today of these surpluses over the entire period. If the firm operates in the location for ten years with 59 employees, the township could invest up to \$37,629. That is, the township could invest up to \$37,629 without raising local tax rates. The county could invest another \$71,301.

The county and township could divide these investments based on their expected net benefits or approximately a 65 to 35 percent division.

The results for the school demonstrate an important consideration: the stability of the firm. Dun and Bradstreet data show that a large percentage of firms fail each year. If this firm successfully operates here for 10 years, the present value of the net gains to the school district is \$66,272. If it fails during this period, the results are reversed, with a net loss of \$75,294. This negative result assumes that expenditure declines do not result immediately after a plant fails and that they only decline by 75 percent of the original increase. While all local units of government are affected by this, schools are affected more severely because of the larger amounts of funds involved.

Tax Abatement

If a seven-year tax abatement is given to this firm, using the Community Reinvestment Program, the net gains to the township in year 1 are \$3565 or 16 percent less than without the abatement. In this program the abatement applies only to taxes on improvements to real property and not to tangible personal property taxes, income taxes, or sales taxes.

How Estimates Were Derived

These estimates are derived from the Ohio Economic Growth Impact Model. The data used in this analysis are attached. Because the model has been computerized, different situations can be easily examined.

These results represent the first of a three-phase program. If local decisions are being made about the level of public investment for a firm, specific data on that firm must be studied. A careful review of the other data used in the analysis is also desirable. This type of analysis cannot remove all the uncertainty and risk involved. It can help to focus attention on the key local issues in local growth policies.

For more information on this service, contact Gregory Passewitz, Area Extension Agent, Community Resource Development, 490 S. Broad Street, Canfield, Ohio 44406.

Table 1

PUBLIC FINANCE IMPACTS OF NEW JOBS

FIRM CODE: 3523
COMMUNITY: PERRY TWP

INDUSTRY CODE: FARM MACH
SCHOOL DISTRICT: PERRY LOCAL

DATA CODE: 111111
COUNTY: LAKE

ANNUAL NET BENEFITS TO:

	CITY	COUNTY	SCHOOL DISTRICT
YEAR 1	4348.	8208.	6748.
YEAR 2	4555.	8717.	8659.
YEAR 3	4702.	9191.	8323.
YEAR 4	4668.	9207.	4743.
YEAR 5	5006.	9484.	6855.
YEAR 6	4975.	9460.	7339.
YEAR 7	4968.	9449.	7966.
YEAR 8	5312.	9718.	12036.
YEAR 9	5309.	9734.	12571.
YEAR 10	5329.	9779.	13259.
PRESENT VALUE OVER 10 YEARS AT 5.0% INTEREST	37629.	71301.	66272.
PRESENT VALUE ADJUSTED FOR PLANT FAILURE	21407.	40641.	-75294.

Table 2: Detailed Estimates for Year 1

IN COMMUNITY OF PERRY TWP IN A FARM MACH FIRM EMPLOYING 59 ADDITIONAL WORKERS	
PRIVATE SECTOR BENEFITS	YEAR 1
NEW INCOME, EMPLOYEES IN CITY	172257.
NEW INCOME, EMPLOYEES IN COUNTY	119965.
NEW INCOME, SERVICE SECTOR	27161.
CITY GOVERNMENT	
ADDITIONAL REVENUES	
PROPERTY TAXES, NEW PLANT	753.
PROPERTY TAXES, NEW HOMES	301.
PROPERTY TAXES, ADDITIONAL TANGIBLE	3518.
INCOME TAX	0.
STATE AID	0.
MISC TAXES, NEW RESIDENTS	0.
TOTAL	4572.
ADDITIONAL EXPENDITURES	
POLICE	0.
FIRE	43.
WATER	0.
SEWER	0.
STREETS	166.
OTHER	15.
CAPITAL EXPENSES	0.
TOTAL	224.
NET REVENUES	4348.
COUNTY GOVERNMENT	
ADDITIONAL REVENUES	
PROPERTY TAXES, NEW PLANT	864.
PROPERTY TAXES, NEW HOMES	574.
PROPERTY TAXES, ADDITIONAL TANGIBLE	5006.
SALES TAX	2267.
STATE AID	0.
MISC TAXES, NEW RESIDENTS	89.
TOTAL	8800.
ADDITIONAL EXPENDITURES	
CAPITAL EXPENSES	0.
SERVICES, NEW RESIDENTS	592.
TOTAL	592.
NET REVENUES	8208.
SCHOOL DISTRICT	
ADDITIONAL REVENUES	
PROPERTY TAXES, NEW PLANT	4215.
PROPERTY TAXES, NEW HOMES	2801.
PROPERTY TAXES, ADDITIONAL TANGIBLE	26788.
STATE AID	-23189.
MISC REVENUES	296.
TOTAL	10912.
ADDITIONAL EXPENDITURES	
OPERATING EXPENSES, NEW STUDENTS	4164.
CAPITAL EXPENSES	0.
TOTAL	4164.
NET REVENUES	6748.

Table 3

DATA USED IN ANALYSIS	111111
SECTION ONE: FIRM AND EMPLOYMENT DATA	
1 INDUSTRIAL CLASSIFICATION	
A. TYPE OF BUSINESS	FARM MACH
B. SIC CODE	3523
2 LOCATION OF NEW FIRM	
A. VILLAGE OR CITY	PERRY TWP
B. SCHOOL DISTRICT	PERRY LOCAL
C. COUNTY	LAKE
3 NEW JOBS CREATED	59
4 RESIDENTIAL LOCATION OF WORKERS (PERCENT OF TOTAL)	
A. MUNICIPAL RESIDENTS	0.40
B. REST OF COUNTY RESIDENTS	0.30
C. IN-MIGRANTS TO THE CITY	0.05
D. IN-MIGRANTS TO THE COUNTY	0.05
E. COMMUTERS FROM OUTSIDE COUNTY	0.20
5 AVERAGE ANNUAL WAGES	
A. FOR LOCAL EMPLOYEES	13034.
B. FOR IN-MIGRANTS	14989.
C. ANNUAL RATE OF CHANGE	0.090
6 NEW PLANT'S MARKET VALUE	
A. BUILDINGS AND OTHER REAL PROPERTY	440232.
B. TANGIBLE PERSONAL PROPERTY	1734543.
7 PERCENTAGE OF WORKERS' INCOMES SPENT IN THE MUNICIPALITY AND COUNTY	
A. BY MUNICIPAL RESIDENTS IN CITY	0.400
B. BY MUNICIPAL RESIDENTS IN COUNTY	0.500
C. BY REST OF COUNTY RESIDENTS IN CITY	0.300
D. BY REST OF COUNTY RESIDENTS IN COUNTY	0.400
E. BY COMMUTERS IN CITY	0.100
F. BY COMMUTERS IN COUNTY	0.250
8 FAMILY SIZE PER EMPLOYEE	3.500
9 INCOME MULTIPLIER	1.200
10 RATIO OF HOME VALUES TO INCOME	2.000

SECTION TWO: TAX DATA

1 PROPERTY TAX RATES AND REDUCTION FACTORS

A. COUNTY INSIDE MILLAGE	2.200
B. COUNTY OUTSIDE MILLAGE	5.200
C. COUNTY TAX REDUCTION FACTOR	0.344785
D. SCHOOL INSIDE MILLAGE	4.200
E. SCHOOL OUTSIDE MILLAGE	35.400
F. SCHOOL TAX REDUCTION FACTOR	0.345894
G. CITY INSIDE MILLAGE	3.600
H. CITY OUTSIDE MILLAGE	1.600
I. CITY TAX REDUCTION FACTOR	0.194327

2 YEAR OF LAST APPRAISAL OR UPDATE 1976

3 EXPECTED ANNUAL RATE OF CHANGE IN PROPERTY VALUES 0.142

4 SCHOOL DISTRICT TAX BASE - TAXABLE VALUES

A. REAL PROPERTY	26663210.
B. TANGIBLE PERSONAL PROPERTY	4872866.
C. TANGIBLE PERSONAL PUBLIC UTILITY PROPERTY	6216290.
D. YEAR TO WHICH VALUATIONS APPLY	1970

SECTION THREE: COUNTY DATA

1 COUNTY PERMISSIVE SALES TAX RATE 0.010

2 CHANGES IN STATE AND FEDERAL AID 0.0

3 MISCELLANEOUS COUNTY REVENUE PER CAPITA 8.66

4 COUNTY OPERATING EXPENSES PER CAPITA

A. CURRENT OPERATING EXPENSES	57.35
B. EXPECTED RATE OF CHANGE	0.090

5 TOTAL ANNUAL CAPITAL COSTS

YEAR 1	0.0
YEAR 2	0.0
YEAR 3	0.0
YEAR 4	0.0
YEAR 5	0.0
YEAR 6	0.0
YEAR 7	0.0
YEAR 8	0.0
YEAR 9	0.0
YEAR 10	0.0
YEAR 11	0.0
YEAR 12	0.0
YEAR 13	0.0
YEAR 14	0.0
YEAR 15	0.0
YEAR 16	0.0
YEAR 17	0.0
YEAR 18	0.0
YEAR 19	0.0
YEAR 20	0.0

SECTION FOUR: SCHOOL DISTRICT DATA

1 ENROLLMENT

A. CURRENT AVERAGE DAILY ENROLLMENT	1658
B. ANNUAL RATE OF CHANGE IN ENROLLMENT	0.007
C. INCREASE IN ENROLLMENT DUE TO NEW PLANT	3

2 TOTAL STATE BASIC AID IN YEAR BEFORE STUDY	1130520.
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3 ANNUAL RATE OF CHANGE IN STATE SUPPORT	0.080
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4 TOTAL CURRENT TRANSPORTATION AID	0.
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5 MISCELLANEOUS REVENUE PER PUPIL	98.70
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6 SCHOOL OPERATING EXPENDITURES PER PUPIL	
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A. CURRENT	1388.00
B. ANNUAL RATE OF CHANGE	0.100

7 ADDITIONAL CAPITAL COSTS

YEAR 1	0.0
YEAR 2	0.0
YEAR 3	0.0
YEAR 4	0.0
YEAR 5	0.0
YEAR 6	0.0
YEAR 7	0.0
YEAR 8	0.0
YEAR 9	0.0
YEAR 10	0.0
YEAR 11	0.0
YEAR 12	0.0
YEAR 13	0.0
YEAR 14	0.0
YEAR 15	0.0
YEAR 16	0.0
YEAR 17	0.0
YEAR 18	0.0
YEAR 19	0.0
YEAR 20	0.0

SECTION FIVE: MUNICIPAL DATA

1 MUNICIPAL POPULATION

A. CURRENT	6661
B. ANNUAL RATE OF GROWTH	0.007

2 MUNICIPAL INCOME TAX RATE	0.0
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3 YEARS OF TAX ABATEMENT	0
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4 CHANGES IN STATE AND FEDERAL AID	0.0
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5 MISCELLANEOUS REVENUE PER CAPITA	0.0
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6 CURRENT ANNUAL OPERATION COST PER PERSON OF MUNICIPAL SERVICES

A. POLICE	0.0
B. FIRE	4.17
C. WATER	0.0
D. SEWER	0.0
E. STREETS	16.10
F. OTHER	1.45

7 ADDITIONAL ANNUAL OPERATIONAL COSTS FOR MUNICIPAL SERVICES

A. POLICE	0.0
B. FIRE	43.00
C. WATER	0.0
D. SEWER	0.0
E. STREETS	166.00
F. OTHER	15.00

8 CAPITAL INVESTMENTS BY MUNICIPALITY

YEAR 1	0.0
YEAR 2	0.0
YEAR 3	0.0
YEAR 4	0.0
YEAR 5	0.0
YEAR 6	0.0
YEAR 7	0.0
YEAR 8	0.0
YEAR 9	0.0
YEAR 10	0.0
YEAR 11	0.0
YEAR 12	0.0
YEAR 13	0.0
YEAR 14	0.0
YEAR 15	0.0
YEAR 16	0.0
YEAR 17	0.0
YEAR 18	0.0
YEAR 19	0.0
YEAR 20	0.0

SECTION SIX: OTHER DATA

1	LENGTH OF ANALYSIS	10
2	DISCOUNT RATE	0.050
3	RATE OF INFLATION	0.100
4	RATIO OF VALUE ADDED TO SALES SERVICE SECTOR	0.200
5	PROPORTION OF NEW HOUSING OUTSIDE COMMUNITY REINVESTMENT AREA	
	A. IN THE CITY	0.900
	B. IN THE COUNTY	0.950
6	INCOME LEAKAGE FACTOR	
	A. IN THE CITY	0.30
	B. IN THE COUNTY	0.35
7	RATE OF DEPRECIATION	0.04
8	CUMULATIVE PROBABILITY OF PLANT FAILURE	
	YEAR 1	0.014
	YEAR 2	0.097
	YEAR 3	0.225
	YEAR 4	0.353
	YEAR 5	0.481
	YEAR 6	0.543
	YEAR 7	0.605
	YEAR 8	0.667
	YEAR 9	0.699
	YEAR 10	0.731